

Chapter 5

Environmental, and Occupational Safety and Health Permits, and Compliance Requirements

5.1 INTRODUCTION AND BACKGROUND

Chapter 5 provides information concerning the environmental standards and statutory requirements to the extent necessary to assist in making a decision on the future of the HFBR. Some of the more important regulatory requirements associated with proposed actions are presented and identify the applicable environmental statutes, regulations, and approval requirements. These requirements are found in Federal, State, and local statutes, regulations, permits, approvals, and consultations, as well as in Executive and DOE Orders, Federal Facility Agreements, and Agreements in Principle. These documents provide the standard for evaluating the ability of the various alternatives to meet the applicable environment, safety, and health (ES&H) requirements and for obtaining or continuing required Federal, State, and local permits and licenses necessary to implement decisions. The remainder of the chapter provides a background on environmental requirements, summarizes compliance with occupational safety and health requirements, and discusses the current regulatory environment at BNL, and thus the HFBR.

The HFBR, along with many other facilities at BNL, was constructed before the advent of today's environmental and worker health requirements. However, DOE has placed resources into programs designed to achieve compliance with current applicable Federal, State, and local ES&H requirements in response to the emerging awareness of environmental and health-related issues and the enactment of environmental and worker health programs. Today, many government agencies at the Federal, State, and local levels have regulatory authority over DOE facility operations, including those at BNL. DOE has entered into enforceable compliance agreements with various regulators. These agreements detail specific programs and schedules for achieving compliance with applicable ES&H statutory and regulatory requirements.

5.2 ENVIRONMENTAL REQUIREMENTS

5.2.1 ENVIRONMENTAL STATUTES, ORDERS, AND AGREEMENTS

The Atomic Energy Act of 1954, as amended, directs DOE to protect public health and minimize dangers to life or property with respect to activities under its jurisdiction. The EPA, under authority of the *Atomic Energy Act*, has set radiation protection standards for workers and the public. EPA has also promulgated Federal environmental regulations and implemented statutes to protect the environment and to control the generation, handling, treatment, storage, and disposal of hazardous materials and waste substances that may be generated as a result of each of the alternatives considered for the future HFBR.

Because of their length, and for ease of reading, all of the tables in this chapter are presented consecutively at the end of the text. Table 5.2–1 lists the applicable Federal environmental statutes, regulations, and Executive Orders, and also identifies the associated permits, approvals, and consultations generally required to site, construct, or operate DOE facilities, including the HFBR. DOE is committed to fully complying with all applicable environmental statutes, regulatory requirements, and Executive and DOE orders. Table 5.2–2 lists DOE ES&H orders that apply to all DOE sites, including BNL.

DOE has entered into agreements with regulatory agencies on behalf of BNL. These agreements normally establish a schedule for achieving full compliance at BNL facilities, including the HFBR. Table 5.2–3 lists those DOE environmental agreements with Federal and New York State regulatory agencies that have substantive provisions in effect. These agreements and consent orders are generally available from the regulatory agency that is a party to the agreement, either the NYSDEC or EPA regional office, and also from the local DOE information resource center or reading room. Table 5.2–4 lists the potential requirements imposed by the major State environmental statutes and regulations applicable to the HFBR EIS. These requirements apply to Federal activities within the jurisdiction of the enforcing authority. Just as Table 5.2–1 identifies requirements based on Federal laws, Table 5.2–4 identifies the permits, approvals, and consultations generally required to site, construct, or operate facilities in accordance with New York State statutes and regulations.

5.2.2 ENVIRONMENTAL CONSULTATIONS

The *National Environmental Policy Act* (NEPA) requires that, during the preparation of this EIS, DOE consult with all with Federal, State, and local agencies and federally recognized Native American groups regarding the potential for alternatives for HRBR operations to disturb sensitive resources. Most of these consultations are related to biotic resources, endangered species, cultural resources, and Native American rights. Chapter 7 lists Federal and State agencies that have been offered an opportunity to comment on the Draft EIS. Appendix E contains letters pertaining to consultations.

5.2.3 ENVIRONMENTAL PERMITS

BNL has applied for various air, solid waste, and water permits in accordance with Federal and State regulatory requirements outlined in Tables 5.2–3 and 5.2–4. Section 5.3 summarizes the status of permits and other regulatory issues at BNL that are relevant to the HFBR.

5.2.4 COMPLIANCE WITH OCCUPATIONAL SAFETY AND HEALTH REQUIREMENTS

The health and safety of all workers associated with the HFBR is one primary consideration in the decision resulting from this EIS. A comprehensive nuclear and occupational safety and health initiative was announced by the Secretary on May 5, 1993, entailing closer consultation with the Occupational Safety and Health Administration (OSHA) regarding regulation of worker safety and health at DOE contractor-operated facilities such as the HFBR. Regulation of worker health and safety at DOE contractor-operated facilities may gradually shift from DOE to OSHA. The *Occupational Safety and Health Act* of 1970 (Public Law 91-596) establishes Federal requirements for ensuring occupational safety and health protection for all employees. DOE facilities also comply with the *Emergency Planning and Community Right-To-Know Act* (42 USC §11001), which requires facilities to report the release of extremely hazardous substances and other specified chemicals, to provide material safety data sheets or lists thereof, and to provide estimates of the amounts of hazardous chemicals onsite. The reporting and emergency preparedness requirements are designed to protect both individuals and communities.

5.3 ENVIRONMENTAL REGULATORY STATUS AT BNL

As a result of the tritium detected in routine groundwater samples in late 1996, DOE and BNL established the Tritium Remediation Project (TRP). The purpose of the TRP was to implement and manage an

interim accelerated response to ensure protection of public and worker health and the environment. The fastest means by which immediate remedial actions could be taken within the framework of Federal and New York State environmental conservation statutes, rules, and regulations, was to implement provisions of the *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA). Under CERCLA, accelerated actions are allowed to execute rapid environmental response actions. By designating the action as a time-critical “Removal Action,” immediate response action was initiated under CERCLA to ensure tritium-contaminated groundwater above EPA’s drinking water standard (20,000 pCi/l) did not migrate offsite. DOE, together with BNL and in consultation with the New York State Department of Environmental Conservation (NYSDEC) determined that responsive initial remedial actions were best served under the CERCLA process. Accordingly, on February 20, 1997, the NYSDEC formally notified DOE that, pursuant to Article X, Section D of the Federal Facility Agreement (known as the Interagency Agreement [IAG]), the spent fuel pool and associated tritium plume were designated as Area of Concern 29 (AOC 29). AOC 29 falls within the boundary of Operable Unit III and a final remedial action will be determined as a part of the Remedial Investigation/Feasibility Study (RI/FS) process expected to be completed next year. A more detailed discussion of the OUs at BNL can be found in section 3.5. The RI/FS for OU III will culminate in a Record of Decision (ROD) for all AOCs in OU III, including AOC 29. The OU III ROD will incorporate community input and will document the final decision on the selected remedial actions to be taken under the Superfund Program. Regulatory review of Superfund activities at BNL is conducted under the terms and commitments of the IAG among DOE, EPA, and NYSDEC.

As required by Section 512 of the Conference Report accompanying Public Law 105-62, the *Energy Development Appropriations Act* of 1998, the water resources sections of this EIS present a discussion of the remediation plan and program for AOC 29 to date. Specific details of the remediation activities concerning OU III and specifically AOC 29 (spent fuel pool and tritium plume) will be made public under the provisions of CERCLA. Once published, the remediation activities will be incorporated by reference in the appropriate sections of this EIS.

EPA placed BNL on the National Priorities List (NPL) on November 21, 1989. The NPL is a list of hazardous waste sites that are considered high priority for cleanup under the Federal Superfund Program known as CERCLA. In 1991, BNL established the Office of Environmental Restoration to remediate areas of known contamination, and to identify, characterize, mitigate, and eliminate, as appropriate, other areas of contamination. The *Federal Facilities Compliance Act* (FFCA) of 1992 required DOE sites such as BNL to work with DOE and local regulatory agencies to develop plans for treatment and disposal of mixed wastes. In May 1992, the IAG between DOE, EPA, and the New York State Department of Environmental Conservation became effective to ensure compliance with CERCLA. The IAG requires that environmental impacts associated with past activities at BNL are thoroughly and adequately investigated so that appropriate response actions can be formulated, assessed, and implemented.

5.3.1 AIR

Radioactive airborne effluent emissions at BNL and the HFBR are governed by National Emissions Standards for Hazardous Air Pollutants (NESHAPs). BNL reports all airborne effluent release data and dose calculations to DOE and EPA annually. Also, nonradiological emission sources are evaluated annually to ensure compliance with various New York State and Federal permitting requirements required under New York State Air Pollution Control Regulations (Title 6, Part 200) and the *Clean Air Act*.

BNL is in the process of updating its NYSDEC Title V operating permit application pursuant to the New York Code of Rules and Regulations (Title 6, Part 201). This process includes a comprehensive review of State and Federal regulations to ensure that all Federal and State air quality regulatory requirements

applicable to BNL operations have been identified and are included within the Title V permit application, the compilation of a complete emission source inventory, the identification of processes and/or operations that have more than one probable operating scenario including the development of permit provisions that will provide departments with the flexibility to operate under anticipated operating scenarios as they occur, and the development of compliance schedules covering any applicable requirements that BNL has not complied with at the time applications are submitted. All applicable regulatory requirements must be identified in the permit application and BNL must certify that it is complying with said requirements.

5.3.2 WATER

Sanitary, process-waste waters, and non-contact cooling waters that are discharged from the HFBR are regulated by a State Pollutant Discharge Elimination System (SPDES) permit issued by NYSDEC. Effluents discharged to seven recharge basins, the Peconic River, and stormwater emanating from the Central Steam Facility are governed by monitoring requirements and effluent limitations contained in the SPDES permit. *Safe Drinking Water Act* requirements pertaining to the distribution and monitoring of public water supplies apply at BNL and are promulgated under Part 5 of the New York State Sanitary Code. The requirements are enforced by the Suffolk County Department of Health Services as the agent for the New York State Department of Health. As required by Section 512 of the Conference Report accompanying Public Law 105-62, the *Energy Development Appropriations Act* of 1998, the modifications to the HFBR discussed in Chapter 2 will ensure the HFBR is in compliance with Article 12 of the Suffolk County Sanitary Code independent of the alternatives considered in this EIS.

5.3.3 LAND

In January 1998, BNL's new Waste Management Facility (WMF) became fully operational. The WMF replaces the Hazardous Waste Management Facility in its entirety and consolidates several waste management operations into functional buildings designed to ensure regulatory compliance. The WMF brings BNL's waste handling and storage into compliance with EPA and RCRA standards and guidelines. The WMF operates under a RCRA permit for hazardous waste that is effective through July 12, 2005.

Table 5.2–1. Federal Environmental Statutes, Regulations, and Orders

Resource Category	Statue/Regulation/Order	Citation	Responsible Agency	Potential Applicability: Permits, Approvals, Consultations, and Notifications
Air	<i>Clean Air Act</i> (CAA), as amended	42 USC §§7401 <i>et seq</i>	EPA	Requires sources to meet standards and obtain permits to satisfy: National Ambient Air Quality Standards (NAAQS), State Implementation Plans, Standards of Performance for New Stationary Sources, National Emission Standards for Hazardous Air Pollutants (NESHAP), and Prevention of Significant Deterioration.
	National Ambient Air Quality Standards/State Implementation Plans	42 USC §§7409 <i>et seq</i>	EPA	Requires compliance with primary and secondary ambient air quality standards, governing sulfur dioxide, nitrogen oxide, carbon monoxide, ozone, lead, and particulate matter and emission limits/reduction measures as designated in each state's implementation plan.
	Standards of Performance for New Stationary Sources	42 USC §7411	EPA	Establishes control/emission standards and recordkeeping requirements for new or modified sources specifically addressed by a standard.
	National Emission Standards for Hazardous Air Pollutants	42 USC §7412	EPA	Requires sources to comply with emission levels of carcinogenic or mutagenic pollutants; may require a preconstruction approval, depending on the process being considered and the level of emissions that will result from the new or modified source.
	Prevention of Significant Deterioration	42 USC §§ 7470 <i>et seq</i>	EPA	Applies to areas that are in compliance with NAAQS. Requires comprehensive preconstruction review and the application of Best Available Control Technology to major stationary sources (emissions of 100 t/year) and major modifications; requires a preconstruction review of air quality impacts and the issuance of a construction permit from the responsible state agency setting forth emission limitations to protect the Prevention of Significant Deterioration increment.
	<i>Noise Control Act</i> of 1972	42 USC §§ 4901 <i>et seq</i>	EPA	Requires facilities to maintain noise levels that so not jeopardize the health and safety of the public.

Table 5.2–1. Federal Environmental Statutes, Regulations, and Orders — Continued

Resource Category	Statute/Regulation/Order	Citation	Responsible Agency	Potential Applicability: Permits, Approvals, Consultations, and Notifications
Water	National Emissions Standards for Emissions of Radionuclides Other Than Radon from DOE Facilities	40 CFR 61	EPA	Establishes standards for radioactive air emissions.
	<i>Clean Water Act (CWA)</i>	33 USC §§ 1251 <i>et seq</i>	EPA	Requires EPA or state-issued permits and compliance with provisions of permits regarding discharge of effluents to surface waters.
	National Pollutant Discharge Elimination System (NEPDES) (section 402 of CWA)	33 USC § 1342	EPA	Requires permit to discharge effluents (pollutants) and stormwaters to surface waters; permit modifications are required if discharge effluents are altered.
	<i>Safe Drinking Water Act (SDWA)</i>	42 USC §§ 300f <i>et seq</i>	EPA	Requires permits for construction/operation of underground injection wells and subsequent discharging of effluents to ground aquifers.
Hazardous Waste	Compliance with Floodplain/Wetlands Environmental Review Requirements	10 CFR 1022	DOE	Requires compliance with all applicable floodplain/wetlands environmental review requirements.
	<i>Resource Conservation and Recovery Act (RCRA)/Hazardous and Solid Waste Amendments of 1984</i>	42 USC § 6901 <i>et seq</i> /PL98-616	EPA	Requires notification and permits for operations involving hazardous waste treatment, storage, or disposal facilities; changes to site hazardous waste operations could require amendments to RCRA hazardous waste permits involving public hearings.
	<i>Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA)/Superfund Amendments and Reauthorization Act of 1986 (SARA)</i>	42 USC §§ 9601 <i>et seq</i> /PL99-499	EPA	Requires cleanup and notification if there is a release or threatened release of a hazardous substance; requires DOE to enter into Interagency Agreements with EPA and state to control the cleanup of each DOE site on the National Priorities List (NPL).
	Executive Order 12580: Superfund Implementation	3 CFR, 1987 Comp., p. 193	EPA	DOE shall comply with the National Contingency Plan (NCP) in addition to the other requirements of the order, as amended.

Table 5.2–1. Federal Environmental Statutes, Regulations, and Orders — Continued

Resource Category	Statute/Regulation/Order	Citation	Responsible Agency	Potential Applicability: Permits, Approvals, Consultations, and Notifications
Other	<i>Community Environmental Response Facilitation Act</i>	PL 102-426	EPA	Amends CERCLA (40 CFR 300) to establish a process for identifying, prior to termination of Federal activities, property that does not contain contamination. Requires prompt identification of parcels that will not require remediation to facilitate the transfer of such property for economic redevelopment purposes.
	<i>Federal Facility Compliance Act of 1992</i>	42 USC § 6961	States	Waives sovereign immunity for Federal facilities under RCRA and requires DOE to develop plans and enter into agreements with states as to specific management actions for specific mixed waste streams.
	<i>Atomic Energy Act of 1954</i>	42 USC § 2011	DOE	DOE shall follow its own standards and procedures to ensure the safe operation of its facilities.
	<i>National Environmental Policy Act (NEPA)</i>	42 USC §§ 4321 <i>et seq</i>	DOE	DOE is required to comply with NEPA implementing procedures in accordance with 10 CFR 1021.
	<i>Toxic Substances Control Act (TSCA)</i>	15 USC §§ 2601 <i>et seq</i>	EPA	DOE shall comply with inventory reporting requirements and chemical control provisions to TSCA to protect the public from the risks of exposure to chemicals; TSCA imposes strict limitations on use and disposal of polychlorinated biphenyl-contaminated equipment.
	<i>Hazardous Materials Transportation Act</i>	49 USC §§ 1801 <i>et seq</i>	DOT	DOE shall comply with the requirements governing hazardous materials and waste transportation.
	<i>Pollution Prevention Act of 1990</i>	42 USC §§ 13101 <i>et seq</i>	EPA	Establishes a national policy that pollution should be reduced at the source and requires a toxic chemical source reduction and recycling report for an owner or operator of a facility required to file an annual toxic chemical release form under section 313 of SARA.
	<i>Executive Order 12088: Federal Compliance with Pollution Control Standards</i>	3 CFR, 1978 Comp., p.243	Office of Management and Budget (OMB)	Requires Federal agency landlords to submit to OMB an annual plan for the control of environmental pollution and to consult with EPA and state agencies regarding the best techniques and methods.

Table 5.2–1. Federal Environmental Statutes, Regulations, and Orders — Continued

Resource Category	Statute/Regulation/Order	Citation	Responsible Agency	Potential Applicability: Permits, Approvals, Consultations, and Notifications
	<i>Executive Order 11514: Protection and Enhancement Of Environmental Quality</i>	3 CFR, 1966-1970 Comp., p. 902	CEQ	Requires Federal agencies to demonstrate leadership in achieving the environmental quality goals of NEPA; provides for DOE consultation with appropriate Federal, state, and local agencies in carrying out their activities as they affect the environment.
	<i>Nuclear Waste Policy Act of 1982</i>	42 USC §§ 10101 <i>et seq</i>	EPA	DOE shall dispose of radioactive waste in accordance with 40 CFR 191.
	<i>Low-Level Radioactive Policy Act</i>	42 USC §§ 2021b-2021d.	Nuclear Regulatory Commission	DOE shall dispose of low-level wastes (LLW) in accordance with the State in which it operates.
	<i>Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations</i>	59 CFR 7629, Feb. 16, 1994	CEQ/EPA	Requires Federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low income populations.

Table 5.2–2. Department of Energy Environment, Safety, and Health Orders

DOE Order	Order Title
5400.1	General Environmental Protection Program
5400.5	Radiation Protection of the Public and the Environment
5480.4	Environmental Protection, Safety, and Health Protection Standards
5480.19	Conduct of Operations Requirements for DOE Facilities
5480.21	Unreviewed Safety Questions
5480.22	Technical Safety Requirements
5480.23	Nuclear Safety Analysis Reports
5480.30	Nuclear Reactor Safety Design Criteria
5484.1	Environmental Protection, Safety and Health Protection Information Reporting Requirements
5530.4	Aerial Measuring System
5700.6C	Quality Assurance
5480.2A	Radioactive Waste Management
5820.2A	Environment, Safety, and Health Reporting
N 441.3	Extension of DOE N 441.1, Radiological Protection for DOE Activities
O 151.1	Comprehensive Emergency Management System
O 225.1A	Accident Investigations
O 231.1	Environment, Safety, and Health Reporting
O 232.1A	Occurrence Reporting and Processing of Operations Information
O 420.1	Facility Safety
O 425.1	Startup and Restart of Nuclear Facilities
O 430.1	Life Cycle Asset Management
O 440.1A	Worker Protection Management for DOE Federal and Contractor Employees
O 451.1A	<i>National Environmental Policy Act</i> Compliance Program
O 460.1A	Packaging and Transportation Safety
O 460.2	Departmental Materials Transportation and Packaging Management, Chapter 1
O 470.1	Safeguards and Security Program

Source: URL <http://www.explorer.doe.gov:1776/htmls/directives.html>

Table 5.2–3. Department of Energy Agreements with Federal and State Environmental Regulatory Agencies

Resource Category	Parties	Scope of Agreement	Effective Date
Air/Soil	DOE/EPA/ New York State Department of Environmental Conservation (NYSDEC)	Federal Facility Compliance Act of 1992 fulfillment and implementation, to identify alternatives appropriate to the site prior to implementation of remedial actions, establish performance requirements, and to prevent, mitigate, or abate the release or threatened release of hazardous substances, pollutants, or contaminants.	05/18/1992
Soil/Water	DOE/NYSDEC	CERCLA – Federal Facility Agreement establishes commitments to comply with the Site Treatment Plan, meet Land Disposal Restrictions requirements, and provide storage, treatment, or other disposition of mixed wastes, as required.	02/15/1998

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Table 5.2–4. New York State Environmental Statutes and Regulations

Resource Category	Legislation/Regulation	Citation	Responsible Agency	Potential Applicability/Permits
Air	Prevention and Control of Air Contamination and Air Pollution Regulations	New York Codes, Rules and Regulations (NYCRR), Title 6, Chapter III Subchapter A	New York State Department of Environmental Conservation	Permit required prior to construction or modification of air contamination source. Implements Title V “Site Permit” Regulations.
	Air Quality Classification System and Air Quality Standards Regulations	NYCRR, Title 6, Chapter III Subchapter B and C	New York State Department of Environmental Conservation	Identifies classification levels based upon predominant land use, and air quality standards for common air pollutants.
Water	State Pollutant Discharge Elimination System Regulations	NYCRR, Title 6, Chapter X Subchapter B, Article 3	New York State Department of Environmental Conservation	Permit required prior to construction or modification of a water discharge source.
	Classifications and Standards of Quality and Purity Regulations	NYCRR, Title 6, Chapter X Subchapter B, Article 2	New York State Department of Environmental Conservation	Establishes ambient water quality standards.
	Releases of Hazardous Substances Regulations	NYCRR, Title 6, Chapter X Subchapter D, Part 595	New York State Department of Environmental Conservation	Establishes spill notification requirements.
	Hazardous Bulk Storage Regulations	NYCRR, Title 6, Chapter X Subchapter D, Part 596	New York State Department of Environmental Conservation	Registration required for bulk storage of material.
	Application for Long Island Wells Regulations	NYCRR, Title 6, Chapter X Subchapter D, Part 602	New York State Department of Environmental Conservation	Requires permit for installation of groundwater monitoring and supply wells.
	Registration of Petroleum Storage Facilities Regulations	NYCRR, Title 6, Chapter X Subchapter D, Part 612	New York State Department of Environmental Conservation	Permit required for operation of major petroleum storage facility.
	Drinking Water Supplies Regulations	NYCRR, Title 10, Part 5	New York State Department of Environmental Conservation	Establishes Public Drinking Water Supply Standards.
	Water Pollution Control	Suffolk County Sanitary Code Article 7	Suffolk County Department of Health Services	Agreement to comply with groundwater protection regulations.

Table 5.2-4. New York State Environmental Statutes and Regulations — Continued

Resource Category	Legislation/Regulation	Citation	Responsible Agency	Potential Applicability/Permits
	Toxic and Hazardous Materials Storage and Handling Controls	Suffolk County Sanitary Code Article 12	Suffolk County Department of Health Services	Agreement to comply with groundwater protection regulations.
Hazardous and Solid Waste	Solid Wastes Regulations	NYCRR, Title 6, Chapter IV Subchapter B	New York State Department of Environmental Conservation	Establishes Solid and Hazardous Waste Management Regulation and Permitting requirements.
Biotic	<i>Long Island Pine Barrens Maritime Reserve Act</i>	NY Environmental Conservation Law, Title 57, Section 0101, <i>et seq</i>	Central Pine Barrens Joint Planning and Policy Commission	Establishes limits for development in certain areas of Suffolk County's Pine Barrens.
	<i>New York State Wild, Scenic and Recreational Rivers Act</i>	NY Environmental Conservation Law, Title 27, Article 15, <i>et seq</i>	New York State Department of Environmental Conservation	Establishes standards for activities conducted in or near designated waterways.
	Regulations for Endangered and Threatened Species of Fish and Wildlife; Species of Special Concern	NYCRR, Title 6, Chapter I Part 182	New York State Department of Environmental Conservation	Establishes species protection requirements.
	Regulations Applicable to Trees and Plants	NYCRR, Title 6, Chapter I Part 182	New York State Department of Environmental Conservation	Establishes flora management standards.